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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,963	08/22/2003	Preston Whitcomb	05689-016001	8398
22832 7590 09/07/2007 Kirkpatrick & Lockhart Preston Gates Ellis LLP (FORMERLY KIRKPATRICK & LOCKHART NICHOLSON GRAHAM) STATE STREET FINANCIAL CENTER One Lincoln Street BOSTON, MA 02111-2950			EXAMINER ADAMS, GREGORY W	
			ART UNIT 3652	PAPER NUMBER
			MAIL DATE 09/07/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/645,963

Applicant(s)

WHITCOMB ET AL.

Examiner

Gregory W. Adams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-15 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) 18-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-15,17 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

***Continued Examination***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 13, 2007 has been entered.

***Specification***

The amendment filed August 13, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Replacement figures 2 and 4a locate "vacuum sensor 81 which is used to detect a change in vacuum applied at the interleaf end effector 80" (See Applicants amended Specification filed 8/13/2007) on/within suction cup 80. Skilled artisans may locate a vacuum differential sensor anywhere along a vacuum line, from a suction cup to a vacuum generator. Moreover, it is not clear from the original filing that the sensor 81 was oval or circular shaped or on the interior of cup 80. Thus, Applicant did not have the location of vacuum differential sensor 81 on vacuum cup 80 at the time of filing.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 6, 10-15 & 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberle (US 4,784,380) (previously cited) in view of Shimose et al. (US 5,324,087).

With respect to claims 1-2, 6, 10-15 & 25-27 Eberle discloses a system comprising:

- a first robotic arm 11a assembly for capturing and releasing a battery plate 15a, a first robotic arm having at least two degrees of freedom (indicated generally as vertical and rotational);
- a second robotic arm 11b for capturing and releasing an interleaf 15b, a second robotic arm having first and second ends and at least two degrees of freedom (indicated generally as vertical and rotational);
- an end effector 25, 28 attached to a second end of a second robotic arm, an end effector configured to apply positive pressure to a surface of an interleaf facing an end effector for capture and release thereof and having a sensor (C8/L47-48) to detect a proximity and engagement of an interleaf with the end effector, a sensor for determining a reduction in a positive pressure;

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- a controller for actuation of a first and second robotic arms, a first and second robotic arms operating substantially simultaneously;
- counterweight 48;

Although Eberle does not disclose wafers and interleaves, Applicant is respectfully reminded that the material or article worked upon by the apparatus does not limit apparatus claims. See MPEP 2115. Eberle discloses picking and placing two unique items which could be used in any system handling two unique items.

With respect to claim 1, "engaged" and "proximity" are interpreted as two separate, but relative conditions. Eberle defines "engaged" where the top member 49a floats up to attach to suction cup 28 which in turn blocks "channel 34 by button 37" causing "a back pressure to be established within channel 34" producing "a signal with respect to a control device (not shown) that enables the pickup 11 to immediately retract". C8/L35-53. It follows that a "proximity" condition is any condition except for a blockage, i.e. fully engaged, which includes a distance between vacuum cup 28 and article which would cause a pressure differential, e.g. a condition less than full blockage.

Eberle discloses sensing pressure at an engaged condition, and does not explicitly disclose sensing pressure differential. Shimose et al. disclose an end effector having a sensor 30 that senses a blockage (C5/L15) and proximity (C5/L17; indicated generally as a "gap") by way of pressure differential. Shimose et al. teach traditional light beam type detectors are limited because they can only sense an engaged condition and not a proximity condition, important when foreign articles come between a vacuum cup and article because articles may otherwise drop. C3/L1-35. Therefore, it

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would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sensor of Eberle to include proximity sensing, as per the teachings of Shimose et al., to detect foreign articles

Claims 7, 8, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberle in view of Shimose et al. and Ichikawa (JP 11163091) (previously cited).

With respect to claims 7, 8, 17, Eberle does not disclose a detection sensor. Ichikawa discloses a first robotic arm 4, second robotic arm comprising a transfer arm 5 having first and second ends, end effector 80 attached at a second end having detection sensors 22a-b, 23a-b that respectively emit and receive reflected light which informs a controller whether a disc or interleaf is being retrieved which simplifies the storage of finished wafers to a packing container. Ichikawa Abstract. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Eberle to include a detection sensor, as per the teachings of Ichikawa, to simplify the art of stacking articles with interleafs.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eberle in view of Shimose et al. and Langenohl et al. (US 3,602,496).

With respect to claim 9, Eberle does not disclose an end effector arm having an electrode. Langenohl et al. discloses an end effector arm having a vacuum cup 33 in combination with electrodes 34, 36 which assist in unstacking paper, metallic foil or synthetic plastic materials "to thus insure that the charged label remains in an optimum position with reference to the mold during injection of plasticized material into the cavity defined by the dies 11a, 11b." C3/L67. Therefore, it would have been obvious to one

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having ordinary skill in the art at the time the invention was made to modify the end effector of Eberle to include electrodes, as per the teachings of Langenohl et al., such that an unstacked item is aligned for further processing downstream from the unstacking operation.

***Response to Arguments***

Applicant's arguments with respect to claims 1-2, 6-15, 17 & 25-27 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory W. Adams whose telephone number is (571) 272-8101. The examiner can normally be reached on M-Th, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GWA *GWA*

*Saul Rodriguez*  
SAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER